What is claimed is:

1. A method of regulating smooth muscle tone in a subject, comprising the introduction and expression of a DNA sequence encoding a protein involved in the regulation of smooth muscle tone in a sufficient number of smooth muscle cells of the subject to regulate smooth muscle tone in the subject.

2. The method of Claim 1, wherein the smooth muscle cells are arterial smooth muscle cells or visceral smooth muscle cells.

3. The method of Claim 2, wherein the smooth muscle cells are located in the bladder, blood vessel walls, bowel, bronchi of the lungs, endopelvic fascia, penis, prostate gland, ureter, urethra, uterus, or vas deferens of the subject.

4. The method of Claim 2, wherein the visceral smooth muscle cells are bladder smooth muscle cells, colonic smooth muscle cells, corporal smooth muscle cells, gastrointestinal smooth muscle cells, prostatic smooth muscle cells, or urethral smooth muscle cells.

5. The method of Claim 1, wherein the DNA sequence is introduced by a method selected from the group consisting of instillation therapy, electroporation, DEAE Dextran, cationic liposome fusion, protoplast fusion, creation of an *in vivo* electrical field, DNA-coated microprojectile bombardment, injection with recombinant replication-defective viruses, homologous recombination, and naked DNA transfer.

6. The method of Claim 1, wherein the DNA sequence is genomic DNA or cDNA.

7. The method of Claim 1, wherein the protein modulates relaxation of smooth muscle.

8. The method of Claim 7, wherein the protein is selected from the group consisting of connexin 43, nitric oxide synthase, guanylate cyclase, adenylate cyclase, protein kinase G, protein kinase A, potassium channels, calcium channels, and any combination thereof.

9. The method of Claim 8, wherein the potassium channel protein is maxi-K or K_{ATP}.

10. The method of Claim 7, wherein the protein modulates vasorelaxation of corporal smooth muscle.

11. The method of Claim 1, wherein the protein modulates contraction of smooth muscle.

12. The method of Claim 11, wherein the protein is selected from the group consisting of connexin 43, the alpha-1 receptor or the endothelin-1 receptor, phospholipase C, diacylglycerol, protein kinase C, myosin light-chain kinase, calmodulin, potassium channels, calcium channels, and any combination thereof.

13. The method of Claim 1, wherein the protein encoded by the DNA inhibits a protein that modulates contraction of smooth muscle.

14. The method of Claim 13, wherein the protein that modulates contraction of smooth muscle is selected from the group consisting of connexin 43, the alpha-1 receptor or the endothelin-1 receptor, phospholipase C, diacylglycerol, protein kinase C, myosin light-chain kinase, calmodulin, potassium channels, calcium channels, and any combination thereof.

15. The method of Claim 13, wherein the protein encoded by the DNA inhibits a protein that modulates vasoconstriction of corporal smooth muscle.

16. The method of Claim 15, wherein the protein that modulates vasoconstriction of corporal smooth muscle is protein kinase C.

17. The method of Claim 1, wherein the protein encoded by the DNA inhibits a protein that modulates relaxation of smooth muscle.

18. The method of Claim 17, wherein the protein that modulates relaxation of smooth muscle is selected from the group consisting of connexin 43, nitric oxide synthase, guanylate cyclase, adenylate cyclase, protein kinase G, protein kinase A, potassium channels, calcium channels, and any combination thereof.

19. The method of Claim 17, wherein the protein that modulates relaxation is connexin 43.

20. The method of ~~Claim 1,~~ wherein the subject has a dysfunction selected from the group comprising asthma; benign hyperplasia of

the prostate gland (BHP); coronary artery disease (infused during angiography); erectile dysfunction; genitourinary dysfunction of the endopelvic fascia, prostate gland, ureter, urethra, urinary tract, or vas deferens; irritable bowel syndrome; migraine headaches; premature labor; Raynaud's syndrome; and thromboangitis obliterans.

21. A recombinant vector comprising:

a) the DNA of, or corresponding to at least a portion of, the genome of a virus, which portion is capable of directing the expression of a DNA sequence; and

b) a DNA sequence encoding a protein involved in the regulation of smooth muscle tone, which sequence is operably linked to the viral DNA and capable of expression in a target cell.

22. The recombinant vector of Claim 21, wherein the protein modulates relaxation of smooth muscle.

23. The recombinant vector of Claim 22, wherein the protein is selected from the group consisting of nitric oxide synthase, guanylate cyclase, adenylate cyclase, protein kinase G, protein kinase A, potassium channels, calcium channels, and any combination thereof.

24. The recombinant vector of Claim 23, wherein the protein is maxi-K or K_{ATP}.

25. The recombinant vector of Claim 21, wherein the protein encoded by the DNA inhibits a protein that modulates contraction of smooth muscle.

26. The recombinant vector of Claim 25, wherein the protein that modulates contraction of smooth muscle is protein kinase C.

27. The recombinant vector of Claim 21, wherein the virus is selected from the group consisting of adenovirus, DNA virus, retrovirus, or RNA virus.

28. A smooth muscle cell which expresses one or more exogenous DNA sequences that encode a protein involved in the regulation of smooth muscle tone.

29. The cell of Claim 28, which is an arterial smooth muscle cell or a visceral smooth muscle cell.

30. The cell of Claim 28, wherein the protein expressed by the smooth muscle cell modulates relaxation of smooth muscle.

31. The cell of Claim 30, wherein the protein is selected from the group consisting of nitric oxide synthase, guanylate cyclase, adenylate cyclase, protein kinase G, protein kinase A, potassium channels, calcium channels, and any combination thereof.

32. The cell of Claim 31, wherein the protein is maxi-K or K_{ATP}.

33. The cell of Claim 28, wherein the protein expressed by the smooth muscle cell inhibits a protein that modulates contraction of smooth muscle.

34. The cell of Claim 33, wherein the protein that modulates contraction of smooth muscle is protein kinase C.

35. The cell of Claim 28, wherein the DNA sequence is introduced into the cell by a method selected from the group consisting of electroporation, DEAE Dextran, cationic liposome fusion, protoplast fusion, creation of an *in vivo* electrical field, DNA-coated microprojectile bombardment, injection with recombinant replication-defective viruses, homologous recombination, and naked DNA transfer.

36. The cell of Claim 28, wherein the DNA expressed is genomic DNA or cDNA.

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